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# THE JOURNAL OF POLITICAL ECONOMY

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## THE TWELFTH CENSUS OF MANUFACTURES.

THE main purpose of this article is to consider the scope and methods of the census of manufactures and to raise certain questions relating to these subjects. Some of the questions are old and general, but they require to be asked again. Others are particular, and may or may not be new, but at a time when the census of manufactures is in a formative condition they merit attention. Changes and modifications of no small significance have taken place in 1890 and 1900 in the treatment of manufactures, and changes which may be called radical still remain to be made if the census is to realize its possibilities of usefulness. For the census of manufactures has been hitherto bound up too much in the swaddling clothes of tradition and legislative prescriptions. It needs freedom. Methods which were adequate in dealing with a simpler subject-matter, such as population, vital statistics, or even agriculture, break down in dealing with forces at once so plastic and organic as those of manufactures. This is especially the case when the function of the census of manufactures is interpreted as broadly as it is in the United States. Other censuses, especially the Belgian, are more perfect so far as they go, but in the comprehensiveness of its scope and in the vital character of its investigation the United States census

of manufactures is unique. And yet, though the scope of the census is already so wide, examination will, I think, show that it must be further widened. There are at present important questions affecting the progress and well-being of industry—questions imperatively requiring methodical and periodic investigation, which are untouched by the census. Place must be found for these subjects; and the question rises: How is it to be made? The size of the census is already a serious problem. If the present proportions are to be maintained, if there is not to be a very considerable pruning in certain directions, the natural expansion proportionate to the industrial expansion of the country will involve a considerable increase in the census of manufactures. A more critical policy must therefore be pursued. What is required is that the question of census values be threshed out. We need a clear understanding of what the census of manufactures tries to do and cannot do, and does and ought not to do, and does not and ought to do. By such means whatever is unfittest may be judiciously removed, and place made for those inquiries which are considered to be worthy of and suited to a census investigation.

Before approaching the thorny problem of the scope and method, the simple question of the function of the census should be raised. What is the end or purpose of the census of manufactures? To be clear on this is of fundamental importance. It affects the whole consideration of scope and method. It is the basis of the judgment of values. Several of what we regard as the defects of the present census may be traced either to an uncertainty or to the neglect of the root-purpose of a census of manufactures, or else to a real difference of opinion as to what that purpose is. If the latter alternative is the case, then the question all the more deserves attention.

The purpose of the census of manufactures is practical. It is to present an accurate and organized body of relevant fact to the statesman and to the student of social and economic problems. The furnishing of comparisons or the compiling of detailed information which does not give promise of a practical issue should have no place in it. Such things are worse than

useless. They distract attention from that which is vital and they occupy space which other topics should have. The census is a strictly utilitarian investigation. The more it is so the better it is. To say this does not mean that it is to be one whit less impartial or less minute in its investigation, but it does mean that the clear understanding of the census function is the best insurance against the inclusion of irrelevant and inorganic matter. Further, to say that the census is for students and statesmen is not, as it may seem, exclusive and undemocratic. For democracy as it advances fits its tools to suit the hands of experts, not those of any and every one. As it is, there exists a grave danger of the census of manufactures failing to realize what Plato would have called the idea of the census and of becoming instead in parts a census, in parts a technical manual, in parts an industrial history, and in parts a field for statistical exercises of a kind which from their very nature are doomed to be barren of practical results.

The census of manufactures of 1900 marks important changes and improvements. Each state and territory has been treated as a distinct entity, and the statistics for the state, its cities and counties, are presented together in one volume, a brief account of the origin and character of its leading manufactures prefacing the statistics of each state. A separation of manufactures from hand-trades has been made and a step advanced toward eliminating the hand-trades from the census of manufactures. The number of special reports on selected industries has been increased from twenty in 1890 to fifty-nine in 1900. An advance has been made in the classification and grouping of industries in the differentiating of classes, *e. g.*, of salaried officials and wage-earners; in the definition of the meaning of terms, and in the elimination of duplications. At the same time, the field of the expert enumerator has been widened and the industries of 1,341 cities and towns, as against 1,042 in 1890, has been reported on. Considerable improvements have also been made in the administrative organization of the census of manufactures. Contiguous localities have been grouped together under chief special agents—a measure which has insured a more uniform and efficient can-

vass. In several states a chief special agent to supervise the canvass of the state was appointed with satisfactory results. Further, a force of inspecting special agents was organized with marked success. These measures in the field, supplemented by developments in cataloguing at the census office, have rendered the work of the census of manufactures at once more uniform and more thorough. At the same time progress has been made easier by the increased willingness of manufacturers to give the desired information. Lastly, consideration has been given as to the best means of insuring co-operation between different investigating bodies, federal and state, so as to reduce, on the one hand, as far as possible the annoyance to the manufacturers of repeated inquiries, and, on the other hand, to prevent duplication of work and secure uniformity of method.

As regards the scope of the census of manufactures, no radical change has been made. The law required, so far as the schedule was concerned, an exact parallel of the census of 1890. And as the scope of the census has been "one of the most difficult and important problems which the office has been obliged to solve," and as it is around the question of the solution that such criticism as we have to present mainly revolves, it will be well to recall the subjects on which the census of manufactures presents returns. Roughly they are as follows: number of establishments; capital—in land, buildings, machinery, cash and sundries; number employed as salaried officials or wage-earners; number of men, of women, and of children under sixteen employed; total of salaries and of wages; miscellaneous expenses, viz., rent, taxes, interest, and contract work; cost of materials, purchased in raw state and in partially manufactured state; cost of fuel, rent of power and heat, cost of mill supplies, and of freight; number of establishments reporting power, total horsepower; value of products, including custom work and repairing. Returns are made also of the organization of establishments, whether individual, or firm and limited partnership, or incorporated company, or co-operative; of the average number of workers, men, women, and children, during each month of the year; of establishments, both in the hand-trades and manufactures,

classified by the number of persons employed; of the product of the census year and of the preceding year; of power used, whether owned or rented, whether engines, steam, gas, or gasoline, or water-wheels, or electro-motors. These subjects, or a number of them, are recorded in connection with an exhaustive list of specified industries, including hand-trades, and also as regards a group of fifteen leading industries. At the same time their geographical distribution as regards the states and territories is shown. Such is the subject-matter of the twelve tables in Part I. In Part II the same subjects are treated of in connection with the different states, and the distribution of industries in the cities, towns, and counties is shown. In the case of the towns of over 20,000 the specified industries are given. Parts III and IV contain the special reports on selected industries, in all fifty-nine.

Such, roughly, is the scope of the census of manufactures. Let the census be its own first critic. We shall limit ourselves to noticing its comment in three cases. It should be said, however, that the census has passed many excellent criticisms on its own handiwork, and time and again one is led to think that it is its own best critic. Nor is this a new feature of the census work, but there is at least no diminution in the frankness with which difficulties and doubts are avowed.

The first case is the criticism of the practice of including the hand-trades in the census of manufactures. It is shown that the canvass is expensive, lacking in uniformity, arbitrary, and incomplete, and in view of "its demonstrated inaccuracy and the impossibility of making it otherwise," as well on account of its costliness, a strong recommendation is made that the investigation of the hand-trades should be abandoned in future censuses. This is a very important step. It is one which all who realize the gigantic task of the census of manufactures will approve. The hand-trades, as the census says, are different from manufactures. Much of their work is repairing work or job work. They are extremely difficult to canvass properly. Their number is very great, and they keep the most imperfect records of their income and expenditure. Under present conditions the investi-

gation cannot be made satisfactory. At the same time, its national significance is not to be compared with that of manufactures proper. And further, owing to the great difference in the kinds of hand-trades, also to the local and domestic character of the economic services which they perform, it is doubtful if even accurate census statistics would have much value. The recommendation of the census authorities, however, illustrates the fact that the scope of the census cannot be subject to a too careful consideration. We shall find, time and again, reason to doubt the wisdom of Congress in defining with so much detail the province of the census, but the comment of the census in relation to this particular matter is especially worthy of note :

The conditions which led Congress in 1810, 1840, and 1850 to think that a census of the hand-trades was essential to a knowledge of the productive wealth of the country have so completely changed that such a census is no longer needed for that purpose. Congress, however, in enacting successive census laws has failed to take cognizance of these changed conditions.

Yet the value of the census investigation of the hand-trades had already been denied. In the ninth census General Walker had said :

A well-trained statistician can in a few hours from the tables of occupation reach a far more satisfactory result in respect to the products of the minor trades than is to be obtained by manipulating the partial returns of the trades themselves. In a word, the returns of manufacturers should be restricted to those industries which are carried on in considerable establishments and are susceptible of a thorough, complete, and detailed examination.

A second case is that of the returns as to capital. On this point the criticisms of the census are no less incisive. It is shown that the present returns are defective and that their value is strictly limited. General Walker in the census of 1870 had said :

The census returns of capital invested in manufactures are entirely untrustworthy and delusive. The inquiry is one of which it is not too much to say that it ought never to be embraced in the schedules of the census, not merely for the reason that the results are and must remain wholly worthless, the inquiry occupying upon the schedules the place of some technical question which might be made to yield information of great value, but also because the inquiry in respect to capital creates more prejudice and arouses more opposition to the progress of the enumeration than all the other

inquiries of the manufacturing schedule united. It is in fact the one question which manufacturers resent as needlessly obtrusive, while at the same time it is perhaps the one question in respect to their business which manufacturers, certainly the majority of them, could not answer to their own satisfaction even if disposed.

Returning to the subject in 1880 he further remarked :

The statistics of capital invested in manufactures as obtained by a popular canvass in which the statements of individual proprietors are necessarily accepted, and indeed are by the law intended to be accepted, are always likely to be partial and defective far beyond the limit of error which pertains to other classes of statistics derived from the manufacturing schedule. The liability to error in this respect inheres in the very nature of the subject and is probably ineradicable.

In the twelfth census it is pointed out that the force of these objections has been so far diminished by improvements in the schedules of 1890 and 1900, but the particular value of the present returns is carefully discriminated as follows :

The statistics of capital invested at the two censuses (1890 and 1900) show totals which are perfectly comparable, and in this sense and to this degree they are of value, and their collection and publication may thus be justified. As an actual measure of the amount of money invested in the manufactures of the country and required to carry them on from year to year they are not trustworthy data.

Subsequently in dealing with the impossibility of getting rid of duplications :

It appears that, by reason of the inherent difficulties in defining capital for the purpose of statistical measurement, the census office is compelled in compliance with the act of Congress to report as the amount of capital invested in manufactures a sum which is avowedly too small in some cases, and undoubtedly too large in others, with no method available whereby the omissions and duplications may be balanced, and with no reliance whatever to be placed on the accuracy of the figures in consequence.

Such criticisms need no comment. In passing from this subject of capital it may be noticed that the attempts to show the average amount of capital required to give a product valued at \$100 has been abandoned in the twelfth census, another case of the wreck from the insufficient understanding of the scope of the census of manufactures.

A third set of equally trenchant remarks are forthcoming on the subject of wage statistics. Again let the influence of defini-



tive legislation be noticed, not that the results which have accrued were necessary, but to illustrate the old truth that the danger of a course must be estimated, not by necessities, but by possibilities. The act providing for the twelfth and subsequent censuses required returns of "the number of employees and the amount of their wages." To meet this requirement two inquiries were made, one as to the gross amount paid in wages, the other as to the number of wage-earners. But, as the census points out, given these two factors, it is impossible therefrom to show the distribution of wages. The gross amount may be called a labor cost, but that is not a rate of wages. On the other hand, as the census says, the purpose of wage statistics is to show the welfare of the individual workman. This purpose the given statistics cannot answer. It is impossible to obtain from them even an average earning, much less can any idea be formed as to the actual rates of wages in the various industries of the several states. Lastly, the census undertakes to demonstrate that the attempt of certain statisticians to extract from the wage statistics a mean wage for the nation is a false use of them and is not justified under any circumstances. There are times when the census seems to be spelling out its own *reductio ad absurdum*.

We have taken up these three instances of the hand-trades, capital, and wages to illustrate the candor of the census, for which it deserves the highest credit. At the same time these considerations throw no little light on the question of the scope of the census of manufactures. They show the working of a skeptical spirit as regards the value of much of the work expended. Yet the census is like a link in a chain. Its value to no small extent depends on its connection with what goes before and what comes after. Without continuity much of the census work loses its worth.

But criticism and skepticism must go farther than the census carries it. Are there not certain other directions in which the census of manufactures is elaborating data with an aptitude which is profitless? And, in turn, is it not neglecting investigations which are vital and which belong naturally to the census of manufactures? The scope of such a census should be nothing

less than the condition of manufactures and of the manufacturing classes. Returns of the development in production and distribution, of costs and prices, of wages and profits, of number, age, and sex of the wage-earners, of the hours of labor, and of the organization of labor and capital—these should all form part of the census inquiry. Before proceeding, therefore, to call in question the value of certain other subjects treated in the census of manufactures, it will be well to consider the claims of some things which are not treated, or only scantily treated.

The first subject which we bring under notice is the paucity and slight value of statistics as to the condition of the wage-earners. The census regards this as part of its province. It furnishes data on wages, on the amount of labor of either sex, on the amount of labor under sixteen years, or the average monthly number of wage-earners. But we get no light on the question of the number of working hours in the week, or of the number of working days in the year in the different trades. We get no information as to the amount of combination in labor, no record of the number and extent of strikes. We get no data on the subject of child labor in the strict sense of the term, or on the question of the dangerous trades. Yet there is not a single one of these questions which is not of strong practical importance or which is not suited to census investigation.

The number of hours worked in the week and the total number of working days in the year in the different trades is a subject of which a national record is desirable. It is a matter which can be ascertained with great accuracy. It is an important element in estimating productive capacity. Such a record would furnish the basis for various comparisons of a useful character.

A return on the subject of the amount of child labor in the various states ought to have a place in the census. Such information as it at present affords is of very limited value. For as labor under sixteen years is returned as child labor, the great part of the labor so returned is not child labor in the strict sense of the term. Yet child labor is a federal even more than a state question; for federal public opinion, if not federal

legislation, is the force which sooner or later must solve the difficulties and inequalities of the child-labor problem.

The amount of labor organization is a question on which the census should provide a return. Already the census takes account of the combination of capital; yet much more vital is it that the census should show the extent of unionism in labor. It is not so much from a knowledge of the combinations of capital, at least as the census takes account of it, that right judgments are going to be formed on the problems of modern capitalism; but, on the other hand, such information as a census can afford and should afford with regard to the progress of unionism is fundamental to the growth of an informed public opinion or to the formation of sound legislation. The case is all the stronger if there is any truth in the repeated charges that unionism checks production, for the relation of this investigation to one of the most important inquiries of a census of manufactures at once is made clear. It will be of great interest to have a parallel record of the progress of production and of the organization of labor. Nor are manufacturers as a rule unwilling to state whether their shops are union, non-union, or open. At certain crises extravagant claims are made by unionists and non-unionists of the strength of their ranks, and real fluctuations happen to a very considerable extent, but none the less a useful and informing report on this subject could with advantage be embodied in the census of manufactures.

A return on the mortality in the dangerous trades should also have a place in the census of manufactures. Like the question of child labor, this is a federal interest. Yet at present the statistics which might be supposed to give some light on the matter are of little or no use. In the census of vital statistics there are tables showing the occupations of those who died in the census year, and the disease or cause of death is also specified. But there is no attempt at a classification of dangerous trades with tables of the rates of mortality in them. But, what is more serious, many such trades are not even mentioned. On the other hand, there are abundant returns the value of which is hard to discover. Things must be related to their time. We may come

to the day when the number per thousand, and specific causes of the deaths of barbers and butchers, lawyers and musicians, may have a scientific significance. But there is no evidence of such a prospect in the near future. On the other hand, a number of trades require specially close watching, and these particular cases are neglected at least to the extent of being past proper identification. Here, as in the case of child labor, the census requires to regain some of its original Roman and moral association.

We have noticed first some of the omissions of the census of manufactures with regard to the condition of the manufacturing classes. But if there is need in this direction of a wide extension of a census inquiry, there is no less room for fresh developments in the study of the manufactures themselves. A radical investigation is, to our thinking, necessary as regards the whole scope and method of this part of the census of manufactures. The traditional policy is unsatisfactory, and changes in detail will not provide a remedy. First, the census of manufactures will never be on a sound basis so long as it follows the methods of a census of population. Consider the fundamental differences in the two cases. In the case of population, excepting such easily noted influences as a war, a pestilence, a famine, or an emigration or immigration rush, the number can by the decennial system be gauged with sufficient accuracy for any one year. For the product of each year is shown in the total: the growth is cumulative. Population, the original element in the census, is suited to the decennial system. Little or nothing would be gained by a more frequent investigation. But in the case of manufactures the matter is different. In population you have to deal with nature, in manufacture with demand and supply. This being so, the decennial system is equally unsuited to the investigation of manufactures. The returns of a decennial or a quinquennial census may give a far from accurate average of the industrial condition of the country. The difference of a nation's production within a period of even five years is often very great. In the case of the two censuses of the United States, in 1890 and 1900, both years of marked prosperity, a very imperfect

index is thereby furnished of the manufacturing productivity of the country in 1894. And this brings us to a fundamental condition of any satisfactory census of manufactures, viz., that it must not be based on the investigation of a stated year, but must rest on a continuous record of the industrial conditions of the country. If a proper account of the development of the national manufactures is to be kept, it is necessary to keep it for the whole time. In a world of demand and supply you cannot argue from samples. Not that it is therefore necessary that there should be a yearly publication, but the stream of fact on which finally publication is based must be continuous.

This brings us to a second condition wherein a census of population differs from a census of manufactures. In the case of population, because of its greater fluidity, the census must as far as possible be simultaneous. But in the case of manufactures there is no such necessity. Manufactures do not move as population does. They leave a record of themselves. The census of different industries may take place at different times. Manufactures have not the homogeneity which belongs to population. It may be even that one manufacture should be investigated every year, and that in other manufactures an inquiry every two or more years will elicit the desired data. Certainly different industries are suited to different treatment. But if the total returns cover the whole course of time, it is possible at any time to make a comprehensive review of the industrial condition of the country, and also to judge how far it is representative. There is a third well-marked difference between the cases of population and manufactures. The subject-matter of the former is simple, that of the latter is complex. As a result, the simple statistical methods suited to population are inadequate in dealing with manufactures. Some means more flexible and more capable of presenting an organic view of an industry was necessary, and this has been found in the special report.

One further contrast deserves attention before leaving this subject. The census of population is unique. There is no other report on the subject. But in the case of the census of manu-

factures it is not so. For every one of the bureaus which issue reports, monthly, yearly, or special, on production, distribution, prices, labor conditions, and such topics as regards industry, is doing the work, however much some may underline differences, which is or is in part census work. For the census report is simply a report of manufactures in the year 1900, with some extra information thrown in as a makeweight. The comparison instituted between that year and other years is not a unique feature; it is characteristic to some extent of all reports, monthly, annual, or other, on industry and commerce. No doubt in the boundaries of its scope, and in the manner in which certain topics are treated, as well as in the means whereby it gets its facts, the census of manufactures differs from the work of the Bureau of Statistics or what we may suppose will be the work of the Bureau of Manufactures; but our point is that these and other offices are all laborers in the same field and that they all are parts of the census of manufactures. For the real census of manufactures cannot be decennial or even quinquennial, but must be perennial. It is not merely a permanent office; it is also a permanent investigation which is necessary. And this is possible only through the co-operation of the several investigating and recording bureaus. In some such direction, and for such reasons as have been indicated, a broad change in the scope and work of the census of manufactures seems inevitable.

The second line of criticism which we take as to the returns and reports on manufactures is that the treatment is not sufficiently organic. The census of manufactures, and all the investigations which we say are cognate to it, exist for a practical purpose. They are to provide information as to economic and social forces with which society has ever and again to deal. Has, then, the traditional policy of the census of manufactures been asking the most profitable questions? Should not the census of manufactures be guided in its work by the extent to which in things we may say the human as against the natural is the determining factor? The distinction is rough, but for practical purposes intelligible.

There are economic forces which work with the self-sufficiency or independence of natural forces. They may be predetermined as the geographical location of mineral wealth or the influences of climate. They may be simply organic tendencies which we feel to be the result of influences beyond the control of human law. We call these natural economic forces. In all such cases the genius of insight into nature discovers and obeys. Census information has about as little influence, perhaps less, over them as census information has over population. So far as practical value is concerned, we might as well count the blades of grass or the sands of the sea. In short, there are developments which must feel their way, and as for attempting to control them by any form of social or economic legislation, or even to cultivate a sentiment on the subject, it cannot come to any good.

On the other hand, there are economic results wherein human will and skill have been powerful agencies. It is especially in such directions that investigation should be pushed. Account, however, must also be taken of whether it is possible in the proposed inquiry to get an efficient accuracy. It may be said, therefore, that there are two essential conditions to the value of any inquiry; one, that it admits of a degree of accuracy from which it is possible to draw conclusions; the other, that it is of such a nature as ultimately to lead to a judgment of recognized value.

The census of manufactures has, as we have seen, already criticised several parts of its own inquiry on one or other of these grounds, but there are reasons for skepticism as to the value of much else. Generally there is not sufficient differentiation to make accurate conclusions possible. This is the case with much of the investigation as to cost of production. For example, as regards freight it is difficult to see what value the undifferentiated returns under this head can have. If it were possible to present a careful analysis of costs of transportation, just as if it were possible in another table to show accurately how far rent entered into cost of production, then such investigations would be worth carrying through. But general statistics on the subject have little value. The same may be said of sum

totals. Without dispute they have their use, but what is wanted everywhere is differentiation and particularization. In this respect a careful record of prices—and the Bureau of Statistics has helped in this direction—together with a record of the scales of wages in the different industries, would have been of much greater service than the present comprehensive returns. There is, indeed, something stupendous in the attempt to get a return of the capital, cost of materials, etc., of not merely the manufactures of 209 towns, but also of their hand-trades, from blacksmithing to watch repairing and women's dressmaking. The old Greek would have said that the census lacked a sense of the mean.

To pass to a somewhat different line of criticism: Is not the census of manufactures extravagant in its care for geographical details? This is one of the respects wherein the association with a census of population has, in our view, led to developments in the census of manufacture which are of very limited value. Not that it is desirable to eliminate from the census the subject of the geographical distribution of industry, but can it be maintained that the permutations and combinations of the present census on this topic are worth the space, labor, and expense devoted to them? The geographical distribution of industry, its tendency to urban concentration or rural decentration, are illustrations of the working of what we have spoken of as natural economic forces. The census can find out the truth about these forces, but it cannot, relatively speaking, influence their trend. At the same time, it is an investigation which requires very great care, and, to take a concrete instance of the census work, will it be safe, in future comparisons with the present statistics of the seventy-three industries selected as best illustrating concentration, to argue therefrom as to anything more than the tendency of concentration or decentration in these seventy-three industries? The whole problem of what determines the *locus* of an industry is so complex and subtle that one remains skeptical of the value of much of the census work in this direction. For even if the particular data recorded are accurate, what conclusions, for example, are we prepared to draw



from the fact that "lithographing and engraving" have in the analysis of 209 cities 96.6 per cent. of the value of their products manufactured in towns, whereas "rubber and elastic" have 68.7 per cent., and "chemicals" only 57.9 per cent. Or again, what unity is there in a classification of 1,340 cities, including everything from towns of a few thousands to cities of millions? It would be possible to work out many perplexities which beset the geographical investigations of the census of manufactures. As serious, however, as these innate objections is the fact that tables showing the location of industries by states and territories are allowed to usurp so much space and attention. These and the tables showing the industrial rank of the principal cities might be, in a census tending to overgrowth, with advantage curtailed. It may give a puff of satisfaction to the Pittsburger to know that his city outranks industrially thirty-seven states in value, or to the burgher of Scranton to know that his city outranks eleven states; but what real economic value is there in this? Or what purpose is there in showing the rank of the six principal industries in twenty-five cities? There is something inorganic in these geographical labors of the census of manufactures. The result can have no effect on the economic structure of society. It is too general to form a basis for taxation or for any sound statesmanship. But such investigations are in accordance with tradition and they have a superficial interest. Of serious value they can have but little.

We have been considering some of the directions in which the census of manufactures should be reduced. For already its increasing bulk threatens to diminish its usefulness. To say that there is a marginal point beyond which as size increases value decreases may not be of much practical value. But it is practical to insist that there be a stricter censorship of what goes into the census.

There is a third direction in which there is a growing need for economy. The special reports on selected industries, fifty-nine in all, occupy two of the four volumes of the census of manufactures, and in the opinion of the census authorities it is by the further increase of such reports that the usefulness of the census

of manufactures can be best advanced. But with this increase must come a decrease in the size of the special reports. This is a development which is in itself desirable. Great as is the value of these reports, there is much embodied in them which should be left to other agencies to present. These reports should be as concise as possible. The census is not a substitute for an encyclopædia. Historical information which can be got from books is no part of the census. Nor is the census the place for the description of mechanical appliances. The work of the census of manufactures is to show the present economic position of industry and of the industrial classes. It has to present special returns of its own investigation, making use of other information sparingly and for comparison. Many of the special reports should, so far as their existing content is concerned, be reduced to one-fifth or one-sixth of their present extent. This would involve greater uniformity and less discursiveness, but there is need of both of these qualities. For at present one report differs from another in scope and method to an extent which cannot be justified on the ground of their different subjects.

Let anyone compare, for example, the report on locomotives with that on agricultural implements. The former is mainly descriptive of the processes of locomotive construction; the latter is statistical and shows the growth of the agricultural implement industry and its output. In the case of the article on locomotives, a table shows the export for each of the last ten years, but it does not state to what countries the locomotives were sent. There is no attempt to show the growth and development in markets; nothing is done to show within even approximate limits the cost of production of different types, nothing is said as to the rates of wages, or as to the hours of labor. The most striking feature of the report is the account of the developments during the past ten years in locomotive construction, an account which broadens into a description of the principal types of locomotive now in use.

Very different is the report on agricultural implements. An elaborate record is given of the number and character of the

articles produced. The geographical distribution of the industry is worked out at considerable length. The exports to the various foreign countries through each of the ten years are presented and the importance of the foreign market shown. The great development in the industry is further illustrated by reference to the number of patents granted for the various implements. Attention is drawn to the advance of economic machinery in agriculture, and to the saving which it effects. A historical account of the growth of the industry is added. Even in what it does not present, as, for example, a description of the more complicated agricultural machines, as well as in what it presents, the report stands in contrast with that on locomotives.

To take a third illustration of this lack of uniformity: the report on shipbuilding differs both from the report on locomotives and from that on agricultural implements. The article has little or nothing in it of either a historical or a technical character. It is mainly an analysis and comparison of production in 1890 and 1900, attention being for the most part directed to the very topics which are treated of in the tables of Parts I and II of the census of manufactures. There is no attempt to trace the demand and supply during each of the ten preceding years. Figures are presented to show what proportion of the shipbuilding product was distributed to foreign coasting and lake trade respectively. The geographical location of the industry also is presented in considerable detail. But the report lacks in organic character. To see the relative importance of the industry at this stage in the country's industrial development, to present a comparison with the growth of shipbuilding among other leading industrial nations, to show briefly the possible causes for the striking differences which exist between them, to examine cost of production at home and abroad, to show the proportion of government and of private work in the yards, to record the size and tonnage-carrying capacity and speed, etc.,—these are vital matters which at present receive very scant, if any, attention.

In short, there is room for wide change in the organization of the special reports. The value of these special reports as compared with the more rigid statistical method lies in the fact

that they are capable of much greater flexibility. The special report can treat the industry as it ought to be treated in an organic fashion. It can describe the growth and organization, the conditions of work, hours of labor, wages, sanitary progress, the relations existing between capital and labor, the expansion in the use of machinery and its influence on the value and character of the wage earner, the nature and changes of demand, the extent of exports and imports to and from different countries (reference being made to tariff conditions), the expansion of demand due to new uses of the manufactured materials. All these and other similar topics are of an organic importance. Hitherto the census of manufactures may be said to have considered development from the standpoint of production. It is desirable that more attention be given to the view of industry from the standpoint of demand and distribution; for it is from this standpoint that the growth or decline of an industry and of alternative industries can be best understood. A census should, indeed, be a record of the past and the present, because we wish a national stock-taking of industry; but it should also be something which we can scrutinize in the hope of getting light as to the outlook and as to the state of our economic stability.

As a whole, considering especially the value of continuity in a census, there is need for fresh discussion of what are the points on which the census of manufactures should gather information, of how far it can expect or demand publicity, or how far it can secure an efficient accuracy. We believe that as a result important contractions and omissions will be made in the existing lines of inquiry. Not but that it may be possible to show that the matters in dispute have some value, but the question which must decide their fate is and will be whether they are as important as other inquiries which at present can find no place. It is a question of comparative value. The census of manufactures cannot tell us secrets, but it can secure that what it presents is digestible. At present much of its fare is undigestible. We shall see less of lump sums which can convey no definite information, and of averages, whether of wages or of employment or of size of establishment. Without doubt when it works within

a sufficiently limited area the average has its use, but too often it serves as a loose and abstract substitute for accurate statement.

The future, we believe, lies with the special report, but that report must become much more uniform, concise, and organic. On the other hand, it must be extended to every industry of importance; for it is necessary, not only that the treatment of each industry should be organic, but also that the presentation of the whole field of industry should have an organic character; that we should see more distinctly and in their true proportion the individual parts which make up the whole.

There is thus, on the one hand, need for expansion of the scope of the census of manufactures, and, on the other hand, there is room for contraction and economy. But two things are essential if the enterprise is to be successful. One is co-operation. Far-reaching changes may be looked for from the new status of the Census Office and from the closer relations established between cognate branches of the public service. The other requisite is freedom. The definitive legislation by the wisdom of Congress as to what the census shall investigate has had a mischievous influence by directing the development of the work along lines which were not the most efficient. In future it is desirable that the scope is defined in the most general terms. By such means, by closer co-operation of the different offices, and by greater freedom in choosing the lines of its investigation, the census of manufactures will attain a larger measure of public usefulness.

W. G. S. ADAMS.